

**Cancel Claim 5**

**REMARKS**

**I. The Amendments to the Claims and Disclosure**

Applicants have incorporated the features and limitations of Claim 2 into Claim 1 (and then cancelled Claim 2). Applicants have also added to Claim 1 a component (c) for inorganic fillers and a weight percentage range; this is supported in the specification at page 4 lines 22-30. Another addition to Claim 1 is to include "a fully" describing the aliphatic polyamide. Finally in Claim 1 the last weight ratio was changed to read "5:95" as supported in the Summary of Invention at page 2, line 19. This was an error in the claim as originally filed. Claim 4 was amended to better relate to the now amended Claim 1. Claim 5 has been cancelled. The disclosure has also been modified to be consistent with these changes.

**II. The Restriction Requirement**

Applicants confirm their election with traverse of Claims 1, 2, 4 and 5 (Group I) directed to a composition. With respect to Claim 3 (Group II), Applicants respectfully submit that while this claim is directed to an article it is nevertheless a direct extension of the polyamide compositions of Group I. As such little or no additional searching and examination would likely be required, as it is likely that the examination of such an article claim would closely parallel the instant examination. While Applicants certainly understand the time constraints that the Examiner must adhere to in the review of any particular case, Applicants submit that the article claim in question would not pose an undue burden on the Examiner's time. Reconsideration of the withdrawal of Claim 3 is respectfully requested.

**III. Lack of Unity of Invention and Election of Species**

The Examiner indicated that the application contains several species that lack unity of invention. The claims corresponding to the species are (i) Claim 1, (ii) Claims 1, 2 and 4, and (iii) Claim 5. Applicant is required to elect a single species

and to identify claims readable thereon. In view of the substantial amendments to the claims (especially the combination of Claims 1 and 2 and the cancellation of Claims 2 and 5), Applicants respectfully suggest that this matter is largely mooted. That is, Applicants have in effect elected as a species the compositions according to Claim 2 (original species designation (ii)) in view of the amendments to Claim 1. Claims 1 and 4 both as amended read on this species.

#### **IV. The 35 USC 112, Second Paragraph Rejection**

Claims 1, 2, 4 and 5 are rejected under 35 USC 112, second paragraph as indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants anticipate that the amendments introduced with this response suitably address these concerns and as follows:

In Claim 1, the Examiner expressed concerns regarding what is meant by "molar fraction of aromatic monomers among monomer components". Applicants would like to reference a passage in the application (at page 3, lines 1-7) that explains in detail what is meant by this language. It is hoped that this portion of the claim when read in light of the specification is sufficiently clear. Applicants are of course open to wording suggestions by the Examiner in the event that further clarification is required.

Regarding Claims 1, 2 and 5 (components A and B overlapping in scope) Applicants have amended component B to read "a fully aromatic polyamide". This amendment was earlier introduced at the suggestion of the Examiner in the counterpart European application as a means to address this issue.

Regarding Claims 2 (now incorporated into Claim 1) and 5 (now cancelled) and whether the polyamide contains unreacted acid and diamine components as opposed to units derived therefrom, Applicants respectfully suggest that the language is acceptable as worded. Compositions of this variety may contain unreacted monomers, units derived therefrom, or a combination thereof. The components themselves have been identified and made a part of the claim, and those of skill in the art of nylon chemistries will appreciate upon reading this passage that acid and diamine components may exist on several levels. If the Examiner upon consideration of this explanation feels that further clarification is warranted, Applicants are again open to further dialog on this issue.

Regarding Claim 4 and the notation that the language is awkward and confusing, the amendments to this claim hopefully remedy this concern.

#### **V. The 35 USC 102(b) and 35 USC 103(a) Rejections**

Claims 1 and 5 stand rejected under 35 USC 102(b) as anticipated by EP 0,580,387; and Claims 1 and 5 and Claims 2 and 4 stand rejected as obvious over this reference. Moreover, Claims 1, 2 and 4 stand rejected under 35 USC 102(b) as anticipated by or in the alternative under 35 USC 103(a) as obvious over EP 0,488,335.

In order to contrast these applied references from the instant claims, Applicants would like to briefly review the overall approach to their invention. The polyamide compositions of the invention exhibit weldability in connection with the techniques described in the prior art section of the application, and are characterized by the miscibility of molded articles facing to each other and subject to welding. Improvements in the weldability and hydrolysis/chemical resistance are shown with specific materials. In particular, the combination of aliphatic polyamides such as nylon 6, and 6,6 having good weldability with aromatic polyamides are found to have excellent properties such as chemical, hydrolysis and heat resistance. These and other compositions (now in combination with inorganic fillers) have been identified as having suitable miscibility of molded articles when facing each other in welding operations.

However, EP 0,580,387 is directed to polyamide resin compositions comprising aromatic polyamides composed of **aromatic diamine**. It is not relevant to the selected invention. Moreover, EP 0,488,335 is directed to thermoplastic resin compositions comprising **impact modifiers of polymers other than polyamides** in addition to a polyamide mixture of aromatic polyamide and aliphatic polyamide. Finally, the incorporation of specific levels of fillers further specialize and tailor the instantly claimed compositions.

In view of the above, it is respectfully submitted that the subject invention as claimed is allowable and that the case may pass to issuance.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

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Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

In showing the changes, deleted material is shown as bracketed, and inserted material is shown underlined.

**IN THE SPECIFICATION:**

Replace the Abstract as follows:

Page 2, lines 13 to 26 please delete and replace as follows:

Polyamide compositions for welding are provided, having excellent weldability, heat resistance, and hydrolysis resistance. Compositions of (A) an aromatic polyamide in which the molar fraction of aromatic monomers among the monomer components making up the polyamide is at least 0.2, and having a carboxylic acid component consisting of terephthalic acid, isophthalic acid or a mixture of terephthalic acid and isophthalic acid and optionally aliphatic acid, and a diamine component of aliphatic diamine, (B) a fully aliphatic diamine, and (C) inorganic filler, wherein the weight ratio of (A) and (B) is from 99:1 to 5:95 and the inorganic filler is present in an amount of from 5 to 60 percent by weight based on the weight of the composition are described.

Replace the material at page 2, lines 13-26 with the following:

There is disclosed and claimed herein polyamide compositions for welding comprising (A) an aromatic polyamide having a molar fraction of aromatic monomers among monomer components of said polyamide of at least 0.2, and having a carboxylic acid component consisting of terphthalic acid, isophthalic acid or a mixture of thephthalic acid and isophthalic acid and optionally aliphatic acid, and a diamine component of aliphatic diamine; (b) a fully aliphatic polyamide, and (C) inorganic filler, wherein the weight ratio of (A) and (B) is from 99:1 to 5:95 and the

inorganic filler is present in an amount of from 5 to 60 percent by weight based on the weight of the composition.

The diamine component is preferably hexamethylenediamine or a mixture of hexamethylenediamine and 2-methyl pentamethylenediamine.

Page 4, lines 1-5, amend as follows:

[Preferably examples of the polyamide (A) include those in which the] The polyamide (A) uses a carboxylic acid component which is terephthalic acid or a mixture of terephthalic acid with isophthalic acid and optionally aliphatic acid, and the diamine component preferably is hexamethylenediamine or a mixture of hexamethylenediamine with 2-methylpentamethylenediamine.

Page 4, lines 13 to 21, delete as follows:

[The polyamide composition of the present invention comprising (A) an aromatic polyamide comprising carboxylic acid component comprising aliphatic dicarboxylic acid and diamine component comprising aromatic diamine or a mixture of aromatic and aliphatic diamine, and (B) aliphatic polyamide should comprise at least 50% by weight of (A) aromatic polyamide based on a total weight of (A) and (B) polyamide. The above described polyamide (A) and (B) are used in a weight ratio of 50:50 to 95:5. If (A) polyamide is less than 50 wt. %, tensile shear strength is low and such polyamide composition cannot be used to weld polyamide molded articles composed of two or more members.]

Page 4, lines 22, amend as follows

The composition of the invention [may also contain inorganic fillers] contain inorganic fillers in order to increase the mechanical properties. Exemplary inorganic filler include glass fibers, carbon fibers, potassium titanate whiskers, kaolin, talc and mica, with the use of glass fibers being preferred. The amount of inorganic filler blended into the composition, based on the weight of the composition, is generally from 5 to 50% by weight, preferably from 7.5 to 50% by weight, and more preferably from 10 to 45% by weight. At less than 5% by weight, the increase in mechanical strength is insufficient, whereas blending in a large amount of more than 60% by weight results in a poor moldability.

**IN THE CLAIMS:**

1. **(Amended)** A polyamide composition for welding comprising
  - (A) an aromatic polyamide having a molar fraction of aromatic monomers among monomer components of said polyamide of at least 0.2, and having a carboxylic acid component consisting of terephthalic acid, isophthalic acid or a mixture of terephthalic acid and isophthalic acid and optionally aliphatic acid, and a diamine component of aliphatic diamine; [and]  
(B) [an] a fully aliphatic polyamide, and  
(C) inorganic filler,  
wherein the weight ratio of (A) and (B) is from 99:1 to [20:80] 5:95 and the inorganic filler is present in an amount of from 5 to 60 percent by weight based on the weight of the composition.

**Cancel Claim 2**

3. A polyamide molded article comprised of two or more members, wherein at least two of the members have been welded using the polyamide composition for welding of Claim 1.

4. **(Amended)** The composition of claim [2] 1 wherein said aromatic polyamide comprising the carboxylic acid component being terephthalic acid or a mixture of terephthalic acid and isophthalic acid; and the] diamine component [being] is hexamethylenediamine or a mixture of hexamethylenediamine and 2-methyl pentamethylenediamine.

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